SONGJIE XIE

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My research interests lie in **Information Theory** and **Machine Learning** with a focus on Trustworthy Machine Learning and Semantic/Task-oriented Communication.

EDUCATION

Hong Kong University of Science and Technology, Hong Kong   Sep. 2023 - June 2026 (expected)
Ph.D. in ECE, Advisor: Prof. Khaled B. Letaief

ShanghaiTech University, Shanghai, China   Sep. 2016 - June 2023
M.S. and B.Eng. in Electronic and Information Engineering, Advisor: Prof. Youlong Wu

PREPRINTS AND MANUSCRIPTS

[**a**] **S. Xie**, H. He, S. Song, J. Zhang, and K. B. Letaief. "Toward Model-Agnostic Edge Intelligence: Task-Oriented Communication with Semantic Feature Alignment" in preparation.

[**b**] **S. Xie**, H. He, S. Song, J. Zhang, and K. B. Letaief. "Siamese Machine Unlearning with Knowledge Evaporation and Concentration" submitted.

[**c**] **S. Xie**, Y. Wu, J. Li, M. Ding, and K. B. Letaief. "Privacy for Fairness: Information Obfuscation for Fair Representation Learning with Local Differential Privacy" submitted. [Paper]

PUBLICATIONS

[**1**] **S. Xie**, H. He, H. Li, S. Song, J. Zhang, Y-J. A. Zhang, and K. B. Letaief. "Deep Learning-Based Adaptive Joint Source-Channel Coding using Hypernetworks," Meditcom 2024. [Paper] [Code]

[**2**] **S. Xie**, Y. Wu, S. Ma, M. Ding, Y. Shi, and M. Tang. "Robust Information Bottleneck for Task-Oriented Communication with Digital Modulation," *IEEE Journal on Selected Areas of Communication (JSAC)*, 41(8), pp. 2577-2591, June 2023.[Paper] [Code]

[**3**] **S. Xie**, Y. Wu, K. Liao, L. Chen, C. Liu, H. Shen, M. Tang, and L. Sun. "Fed-SC: One-Shot Federated Subspace Clustering over High-Dimensional Data," in Proceedings of the *39th IEEE International Conference on Data Engineering (ICDE)*, 2023, Anaheim, California, USA. [Paper] [Code]

[**4**] T. Rui, **S. Xie**, and Y. Wu. "On the Achievable Rate Region of the K-Receiver Broadcast Channels via Exhaustive Message Splitting," *Entropy* 23.11 (2021): 1408. [Paper]

TEACHING AND SERVICE

Teaching Assistant
Teaching recitations, correcting homework and holding office hours

- EESM 5536: Digital Communications   HKUST, Fall 2024
- ELEC 5360: Principles of Digital Communications   HKUST, Fall 2024
- ELEC 2100: Signals and Systems   HKUST, Spring 2024
- EE 240: Digital Communication   ShanghaiTech University, Fall 2022
- EE 150: Signals and Systems   ShanghaiTech University, Spring 2020

Professional Service

- **Reviewer:** IEEE TWC, IEEE TKDE, IEEE TCOM, IEEE Communications Letters
- **TPC Member:** WCNC2024: WS-15: Model-Driven Deep Learning for 6G